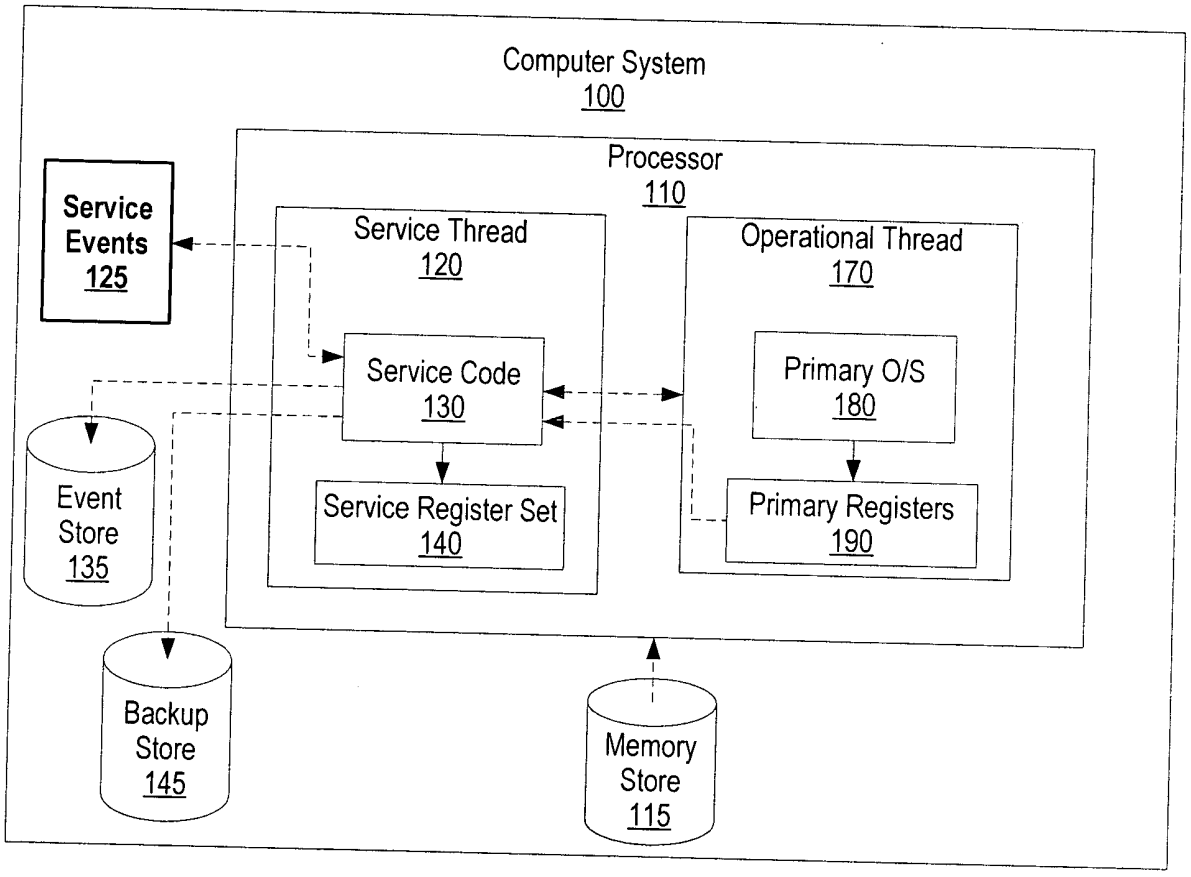

Computer System
100
Processor
110
Service Events
125
Service Thread
120
Operational Thread
170
Service Code
130
Primary O/S
180
Event Store
135
Service Register Set
140
Primary Registers
190
Backup Store
145
Memory Store
115

Figure 1

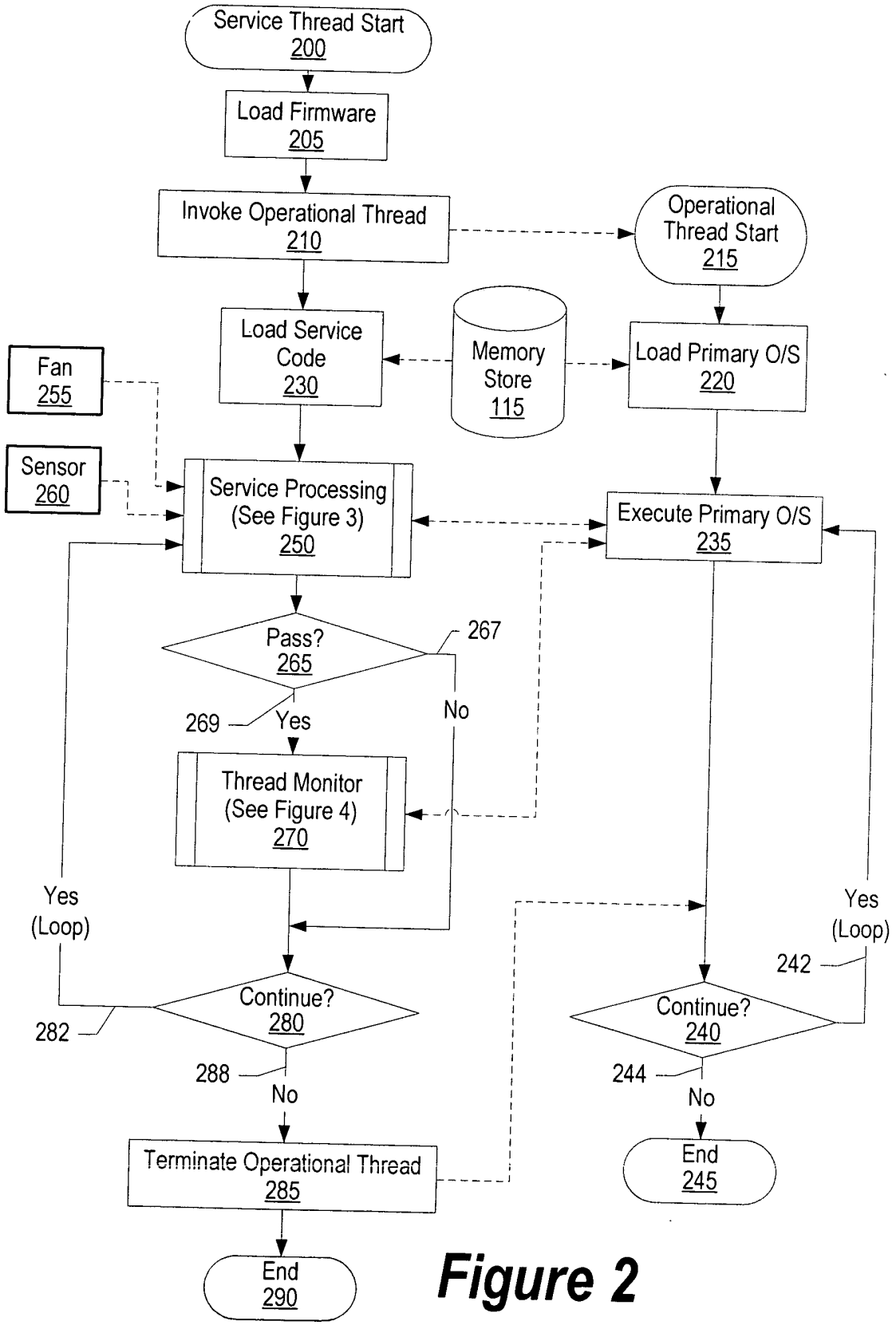

Service Thread Start
200
Load Firmware
205
Invoke Operational Thread
210
Operational Thread Start
215
Load Service Code
230
Memory Store
115
Load Primary O/S
220
Fan
255
Sensor
260
Service Processing
(See Figure 3)
250
Execute Primary O/S
235
Pass?
265
267
No
269
Yes
Thread Monitor
(See Figure 4)
270
Yes
(Loop)
Yes
(Loop)
242
Continue?
280
282
Continue?
240
288
No
244
No
Terminate Operational Thread
285
End
245
End
290

Figure 2

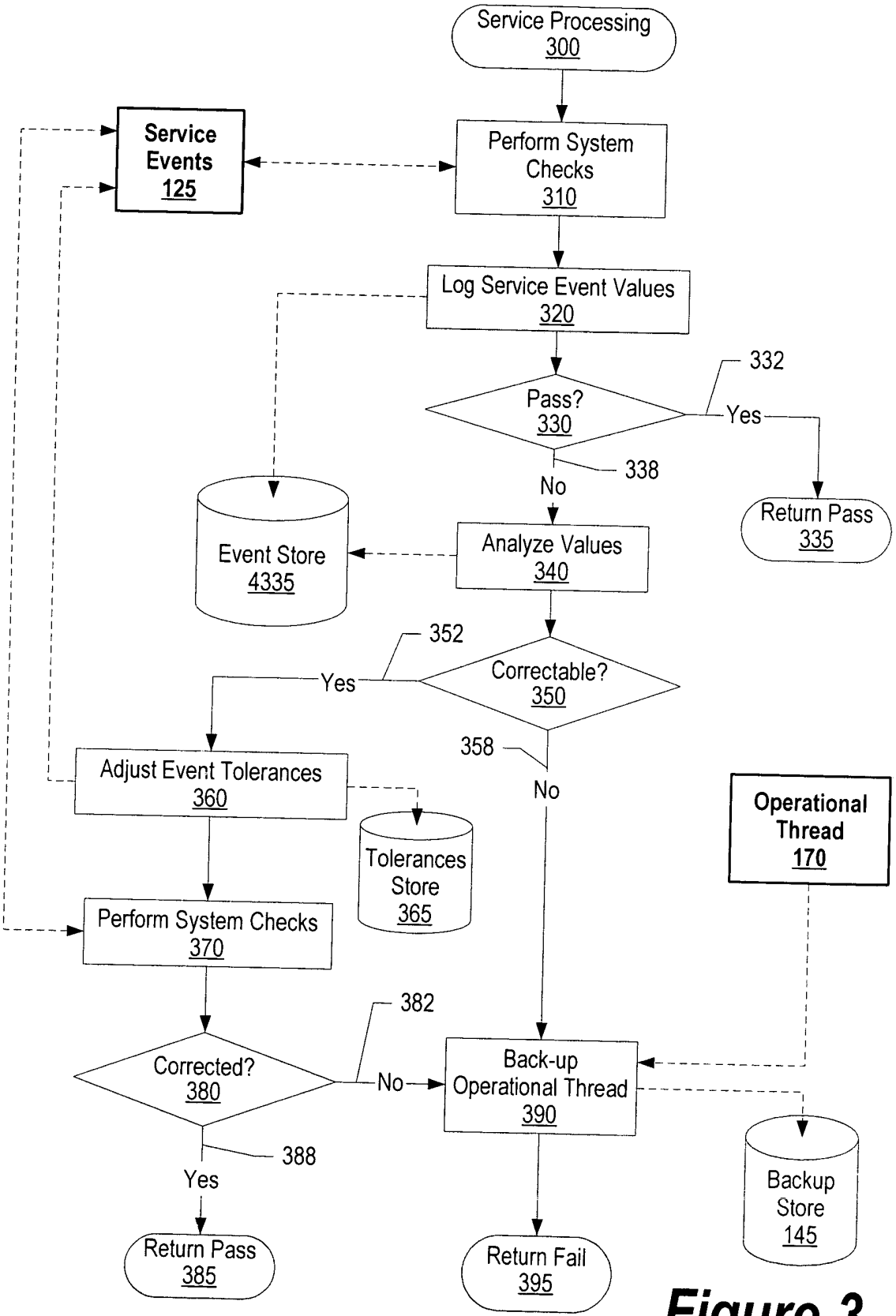

Service Processing
300
Service Events
125
Perform System Checks
310
Log Service Event Values
320
Pass?
330
332
Yes
338
No
Return Pass
335
Event Store
4335
Analyze Values
340
352
Correctable?
350
Yes
358
No
Adjust Event Tolerances
360
Tolerances Store
365
Operational Thread
170
Perform System Checks
370
382
Corrected?
380
No
Back-up Operational Thread
390
388
Yes
Backup Store
145
Return Pass
385
Return Fail
395

Figure 3

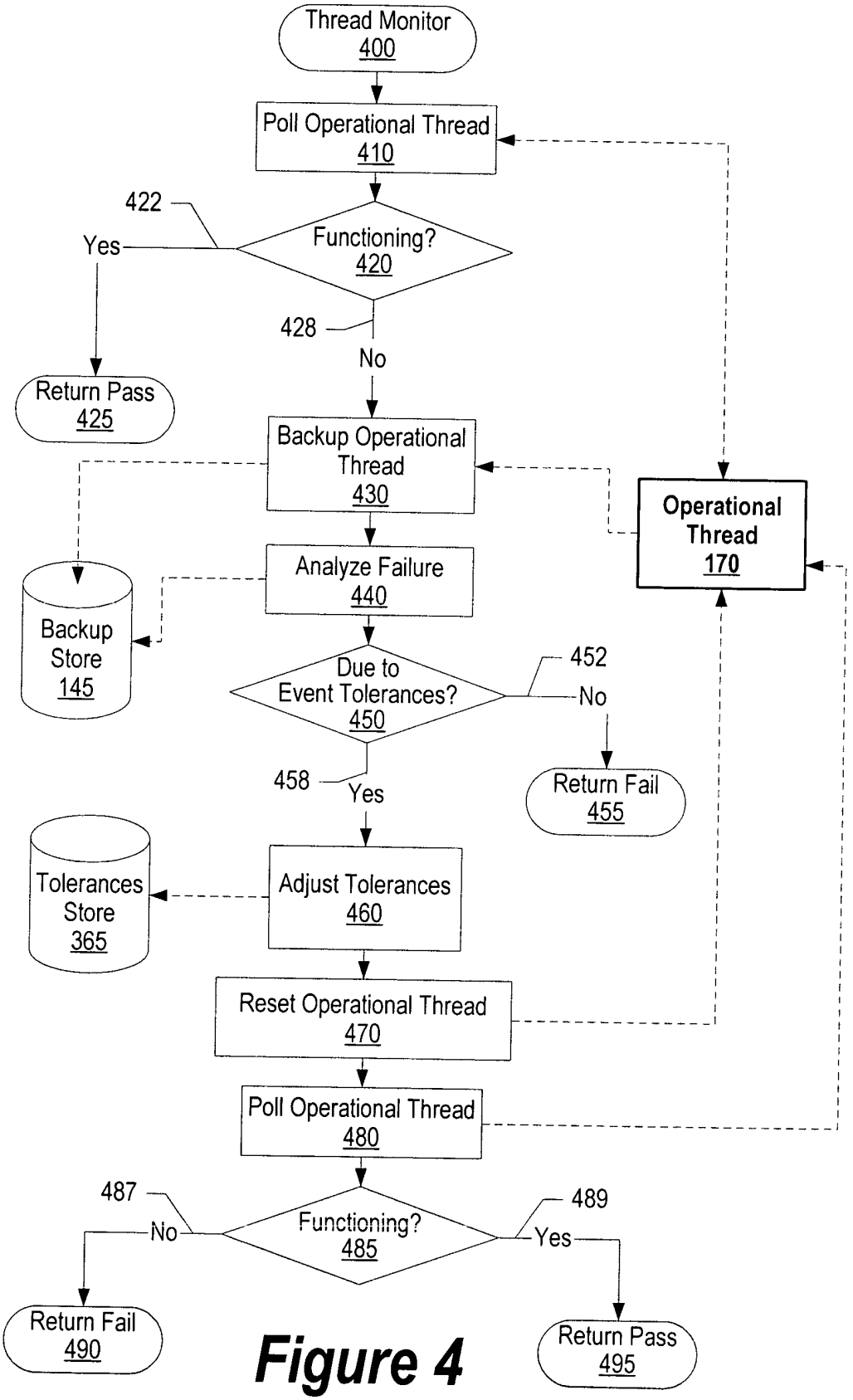

Thread Monitor
400
Poll Operational Thread
410
422
Yes
Functioning?
420
428
No
Return Pass
425
Backup Operational Thread
430
Operational Thread
170
Analyze Failure
440
Backup Store
145
Due to Event Tolerances?
450
452
No
Return Fail
455
458
Yes
Tolerances Store
365
Adjust Tolerances
460
Reset Operational Thread
470
Poll Operational Thread
480
487
No
Functioning?
485
489
Yes
Return Fail
490
Return Pass
495

Figure 4

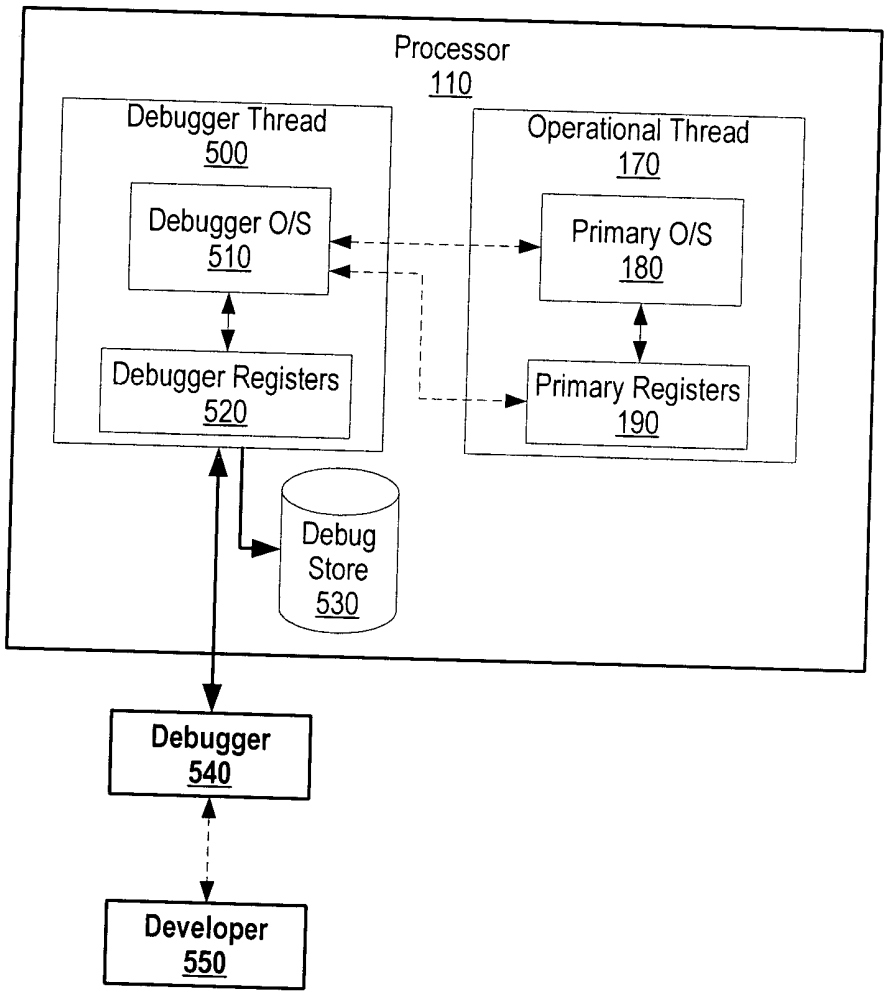

Processor
110
Debugger Thread
500
Debugger O/S
510
Debugger Registers
520
Operational Thread
170
Primary O/S
180
Primary Registers
190
Debug
Store
530
Debugger
540
Developer
550

Figure 5

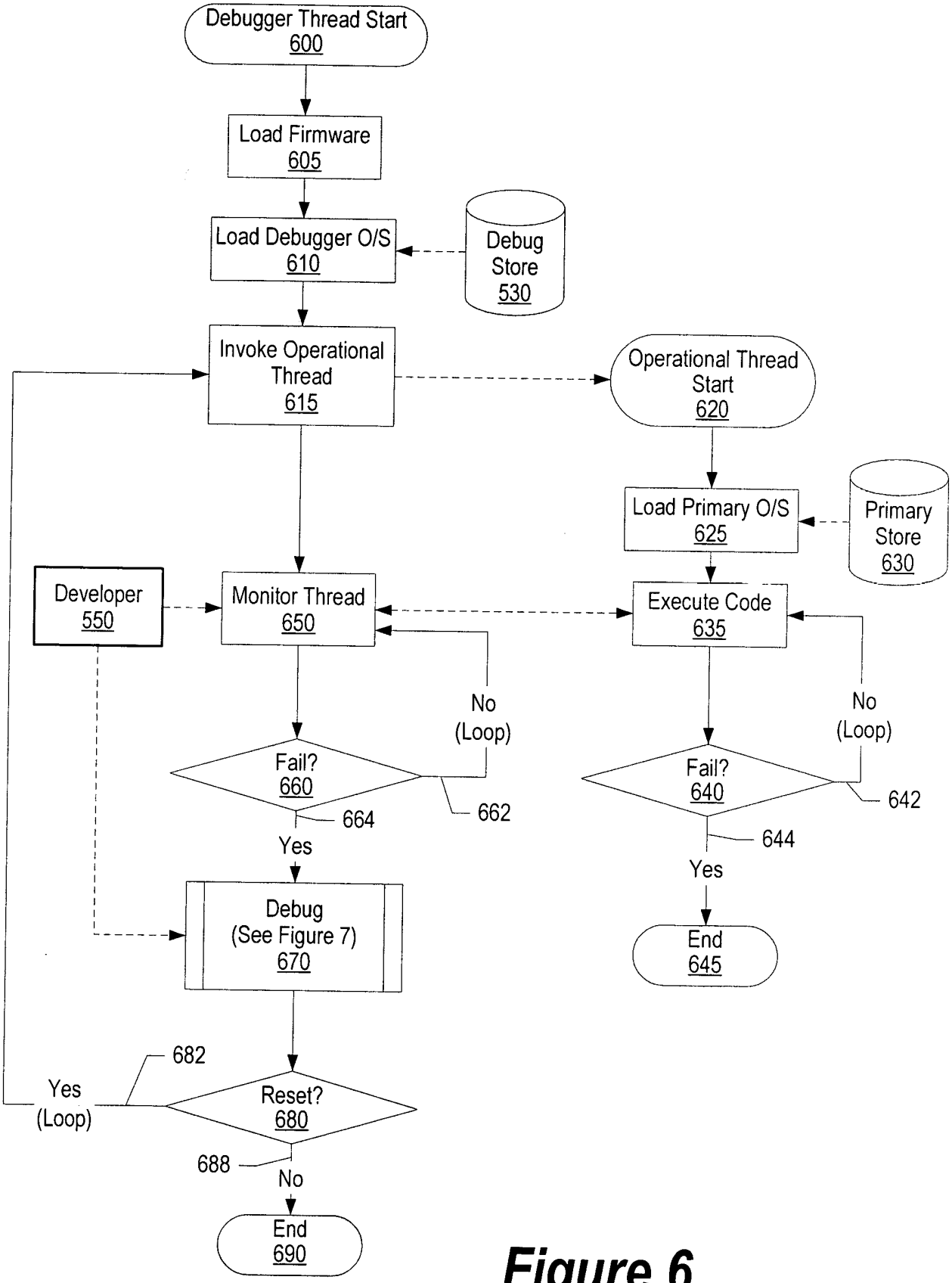

Debugger Thread Start
600
Load Firmware
605
Load Debugger O/S
610
Debug
Store
530
Invoke Operational
Thread
615
Operational Thread
Start
620
Load Primary O/S
625
Primary
Store
630
Developer
550
Monitor Thread
650
Execute Code
635
No
(Loop)
Fail?
660
662
664
Yes
No
(Loop)
Fail?
640
642
644
Yes
Debug
(See Figure 7)
670
End
645
682
Yes
(Loop)
Reset?
680
688
No
End
690

Figure 6

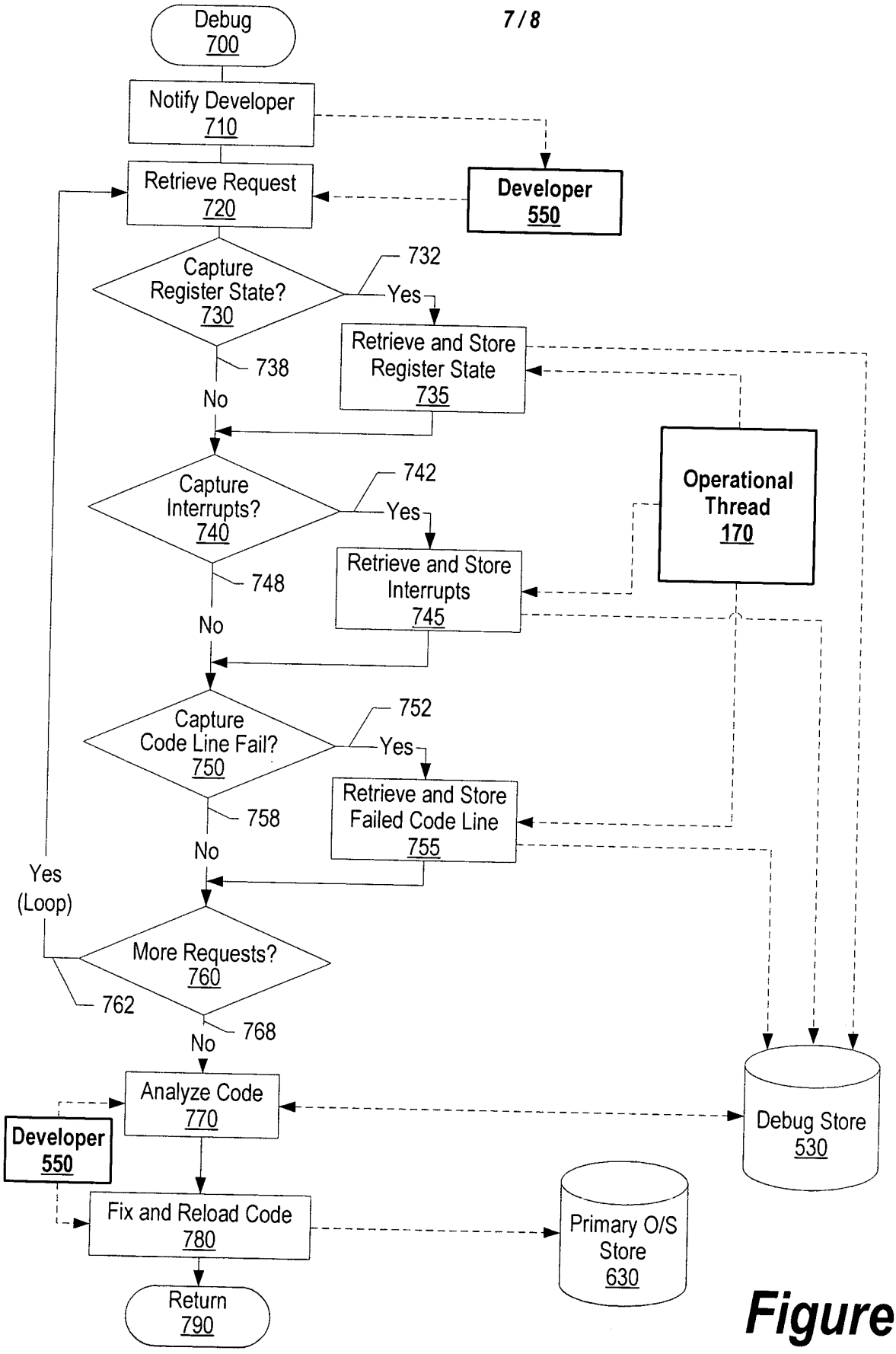

Debug
700
Notify Developer
710
Retrieve Request
720
Developer
550
Capture
Register State?
730
732
Yes
738
No
Retrieve and Store
Register State
735
Capture
Interrupts?
740
742
Yes
748
No
Retrieve and Store
Interrupts
745
Operational
Thread
170
Capture
Code Line Fail?
750
752
Yes
758
No
Retrieve and Store
Failed Code Line
755
Yes
(Loop)
More Requests?
760
762
768
No
Analyze Code
770
Developer
550
Debug Store
530
Fix and Reload Code
780
Primary O/S
Store
630
Return
790

Figure 7

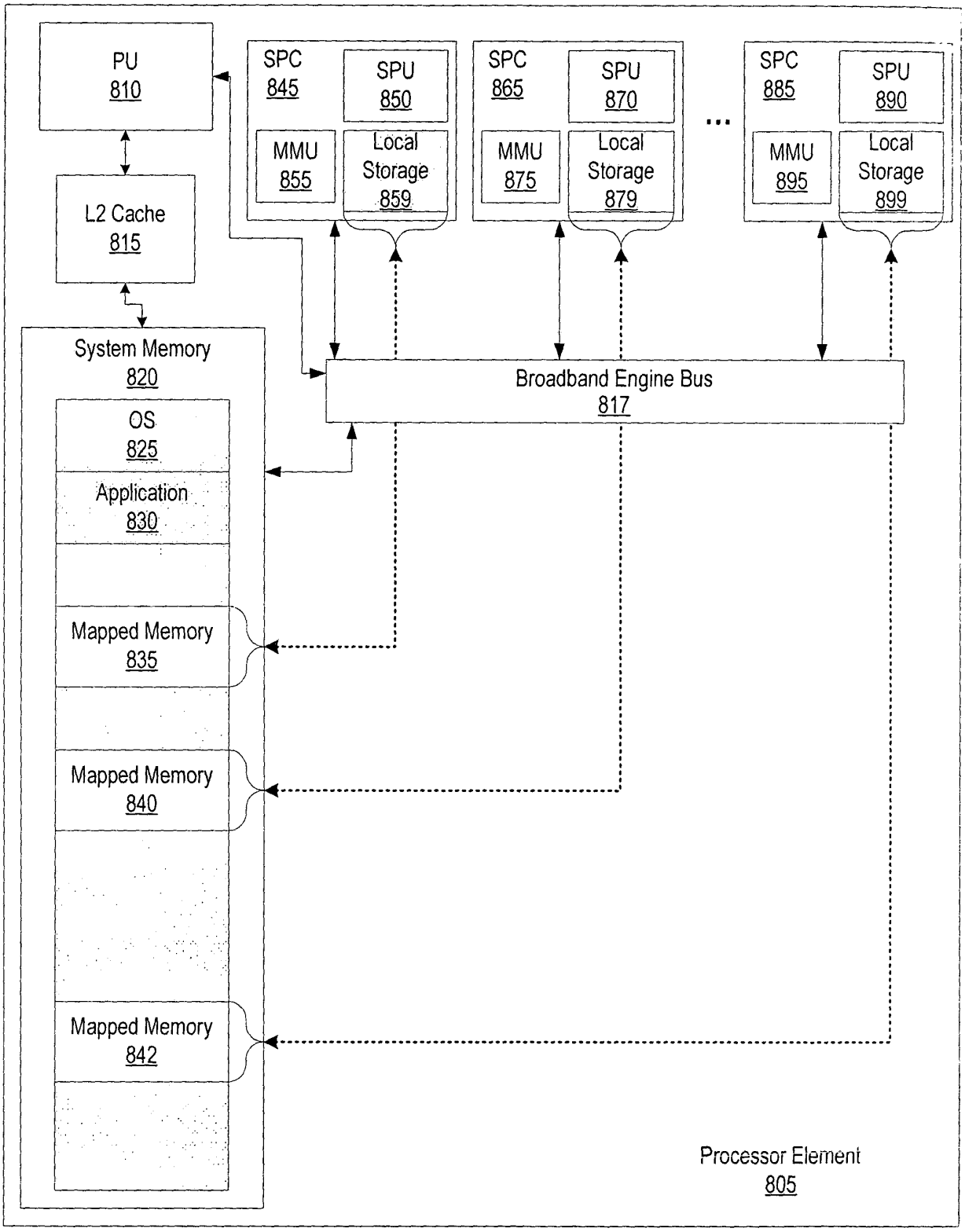

PU
810
L2 Cache
815
SPC
845
SPU
850
MMU
855
Local
Storage
859
SPC
865
SPU
870
MMU
875
Local
Storage
879
...
SPC
885
SPU
890
MMU
895
Local
Storage
899
System Memory
820
OS
825
Application
830
Mapped Memory
835
Mapped Memory
840
Mapped Memory
842
Broadband Engine Bus
817
Processor Element
805

Figure 8